



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,000	12/29/2000	Sadao Hirae	P/1596-51	9450
2352	7590	08/01/2005	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			KORNAKOV, MICHAIL	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/751,000	HIRAE ET AL.	
	Examiner	Art Unit	
	Michael Kornakov	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 15 June 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 9-12,25-28 and 33-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 9-12,25-28 and 33-37 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' amendment to claims 9, 25, 33, dated 06/15/2005, indicating that "the controller controls supplying said cleaning solution... and the controller controlling supplying power to said UV lamps..." is acknowledged. Claims 9-12, 25-28 and 33-37 are currently pending and examined on the merits.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 9, 10, 25, 26, 33, 34, 37 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP63-15710.

JP'710 teaches an article treating apparatus comprising supporting means, rotatable by a motor; a cleaning liquid ejecting device for supplying a cleaning liquid to the upper surface of the article; an ultraviolet radiating device, including a device body (reads on "a reflector, as instantly claimed) and a lamp, the said device positioned above the support means; a controller, which controls functioning of the structural elements of the apparatus, particularly liquid ejecting device, rotatable supporting means and the ultraviolet radiating device (Abstract; Fig. 1; pages 57-59). The indicated wavelength of UV light is 254 nm (page 58, col.5; page 59, col. 9), which is within the instantly claimed range. The cleaning liquid ejecting device of JP'710 is fully capable of supplying a cleaning solution having ozone dissolved in deionized water. The controller of the apparatus of JP'710 is fully capable of controlling the operation of UV radiating device to emit UV light to the substrate being covered with cleaning liquid. Applicants'

attention is drawn to the fact that apparatus claims must be structurally distinguishable from the prior art in terms of structure not function. *In re Danley*, 120 USPQ 528, 531 (CCPA 1959); Hewlett-Packard Co. V. Baush and Lomb, Inc., 15 USPQ2nd 1525, 1528 (Fed. Cir. 1990).

Thus, all the limitations of the instant claims in terms of structure are met by JP'710.

In the event that one skilled in the art does not read the body 12 on the reflector of the instant claims, it will still be obvious to those skilled in the art that the body 12 functions as a reflector, since it surrounds the lamp, and obviously reflects the light emitted from the lamp.

4. Claims 11, 12, 27, 28, 35, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP63-15710 in view of Yeol et al (U.S. 5,983,909).

JP'710 remains silent about base adding means for adding a base to the cleaning liquid. However, auxiliary supply means for adding basic or other cleaning enhancing components are conventionally utilized in the art. Thus, Yeol teaches that aqueous alkaline cleaning solutions are conventionally employed in the art (col.1, lines 45-50). Therefore, one skilled in the art motivated by Yeol would have found obvious to provide base adding means in order to supply basic components into the cleaning solution, thus enhancing cleaning of articles in the treatment apparatus of JP'710.

5. Claims 9,10, 25,26, 33,34,37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konuma (U.S. 6,127,279) in view of Sanada (U.S. 5,843,527) and in further view of Carter et al (U.S. 6,221,168).

Konuma teaches semiconductor treatment apparatus comprising rotatable support means including a chuck connected to the motor; nozzles for supplying treatment solutions, including ozone water; ultraviolet light irradiating source positioned above the support means and capable of irradiating UV light with wavelength less than 400nm toward the semiconductor surface. The apparatus of Konuma is capable of combining the UV radiation with supplying of ozone toward the semiconductor surface (the entire disclosure and specifically col.10, lines 47-49; col.13, lines 22-24; Fig2). The teaching of Konuma does not specifically teach a controller. However, controllers for controlling the functioning of semiconductor treatment apparatuses are conventionally utilized in the art. Thus, Sanada teaches that conventionally a controller within the processing apparatus executes a series of processes based on a stored processing program and functions of the structural elements of the apparatus (col.8, lines 33-56), include controlling spinning of the substrate, supplying the processing solution. Carter teaches semiconductor processing apparatus, which includes UV source with reflectors. Carter teaches the importance of controlling the operation of UV source and provides a controller in order to deliver a desired amount of time averaged power to the semiconductor surface. Therefore, one skilled in the art motivated by Sanada and Carter would have found obvious to utilize a controller, which coordinates functioning of

the apparatus of Konuma, including rotating the substrate, supplying the treatment solutions and UV irradiating the substrate, thus enhancing its processing efficiency.

6. Claims 11,12, 27,28, 33,35,36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konuma (U.S. 6,127,279) in view of Sanada (U.S. 5,843,527) and Carter et al (U.S. 6,221,168) and in further view of Yeol et al (U.S. 5,983,909).

The combined teaching of Konuma/Sadana/Carter remains silent about base adding means for adding a base to the ozone water cleaning solution. However, auxiliary supply means for adding basic or other cleaning enhancing components to ozone water are conventionally utilized in the art. Thus, Yeol teaches benefits of using alkaline additives to ozone water cleaning solutions (Abstract; col.11, lines 13-37). Therefore, one skilled in the art motivated by Yeol would have found obvious to provide base adding means in order to supply basic components into the ozone water cleaning solution in order to enhance cleaning of articles in the treatment apparatus of Konuma/Sadana/Carter.

Response to Arguments

7. Applicant's arguments filed 06/15/2005 have been fully considered but they are not persuasive.

Applicants argue that an apparatus, that includes a "structural" controller which contains the internal hardware/software that causes the ultraviolet emitter to emit the light so that it impinges on the cleaning solution to produce radicals, etc., which ultimately result in a highly improved wafer cleaning apparatus, is nowhere disclosed in

the prior art. In response to Applicants' arguments, it is noted that the features upon which applicant relies (i.e., internal hardware/software that causes the operation of UV emitter) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). It is also noted that apparatus claims must be structurally distinguishable from the prior art in terms of structure not function. Therefore, even JP'710 does not explicitly disclose "controller controlling supplying power to said UV lamps to emit ultraviolet light to said cleaning solution supplied to said substrate and forming a puddle", the apparatus of JP'710 includes all the structural elements as instantly claimed and is fully capable of functioning as instantly recited.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 1746

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Kornakov
Primary Examiner
Art Unit 1746

07/28/2005

Application/Control Number: 09/751,000

Art Unit: 1746

Page 8